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㉗ Semiconductor device having ventilative insulating films.

㉘ A semiconductor device of multilevel wiring construction where a plurality of wiring layers (103,203) are deposited so as to contain an interlevel insulating layers therebetween. The interlevel insulating layers of a semiconductor device according to the present invention have sandwich-like constructions, in which the lowermost film is the first silicon oxide film (104) deposited by plasma vapor deposition method, the intermediate spin-coated film (105) fabricated by means of spin-coating and curing method, and the uppermost film is the second silicon oxide film (106) made by means of plasma vapor deposition method. The first silicon oxide film has high film density, while the second oxide film has low film density.

In the semiconductor device according to the present invention, the outgas generated at sputtering of the second wiring layers from the spin-coated film is released through the second silicon oxide film and does not concentrate in the through holes. Therefore, no corrosion of the wiring layers and no degradation of the step coverage occur; with the result that the disconnection of the second wiring layers in the through-holes are prevented.

According to the present invention, no disconnection of wire in the through-holes occurs even in the through-holes of diameter less than 1 micrometer, while in the prior art the disconnections of wires

are indispensable for such small through-hole.

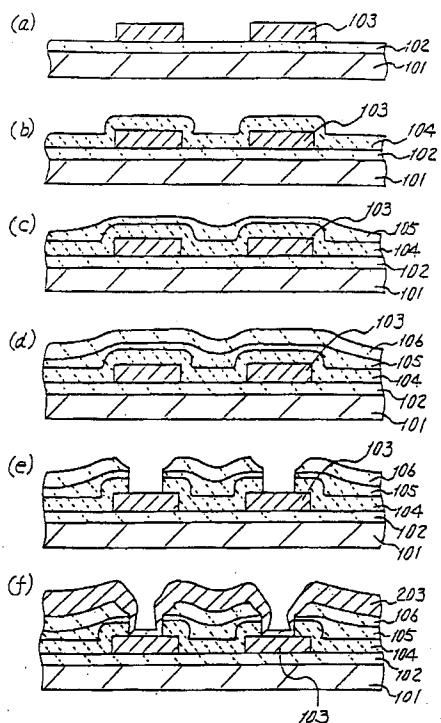


FIG. 1



EUROPEAN SEARCH
REPORT

EP 91 10 7544

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)		
A	WO-A-8 702 828 (MOTOROLA) * abstract; figure 3 * * page 8, line 11 - line 16 * - - -	1,5	H 01 L 23/29 H 01 L 23/485		
A	WO-A-8 807 762 (EASTMAN KODAK) * page 4, line 28 - page 5, line 5 * - - - - -	1,5			
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<p>TECHNICAL FIELDS SEARCHED (Int. Cl.5)</p>					
<p>H 01 L</p>					
<hr/>					
<p>The present search report has been drawn up for all claims</p>					
Place of search	Date of completion of search	Examiner			
The Hague	13 February 92	GREENE S.K.			
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<p>CATEGORY OF CITED DOCUMENTS</p>					
<p>X: particularly relevant if taken alone</p>					
<p>Y: particularly relevant if combined with another document of the same category</p>					
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